

REMARKS

Claims 1-6 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-6 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hirahara (U.S. Pat. Application Publication No. 2002/0160252, hereinafter "Hirahara"). This rejection is respectfully traversed.

At the outset, Applicants reassert the arguments presented in the response to the previous Office Action mailed March 1, 2006. In his "Response to Arguments," the Examiner contends that Applicants are arguing limitations not included in the claims, and further, that Example 4 of Hirahara does not teach a graphitization step. Applicants respectfully disagree with the Examiner's interpretation of the claims and Hirahara.

First, while not specifically called out as a "non-woven" material, Applicants submit that the steps of claim 1 including "cutting carbon fibers into predetermined lengths" and "forming a paper material using the chopped carbon fibers" clearly constitute a non-woven material. As such, the non-woven material limitation is inherently present as a result of the above limitations of claim 1 and, therefore, should be given patentable weight when interpreting the claim. This feature in combination with the negation of a graphitization step distinguishes claim 1 from Hirahara.

As previously argued, Hirahara discloses a woven diffusion media and, therefore, teaches away from the claimed method, *i.e.*, "forming a paper material using the

chopped carbon fibers". While Hirahara discusses both woven and non-woven fabrics, it teaches against the use of non-woven fabrics in favor of woven fabrics. Specifically, Hirahara states that "[n]on-woven fabrics are relatively low in gas permeability, electrical conductivity, etc. and have relatively high stiffness." (paragraph [0039]). Hirahara goes on to discuss the woven fabrics for the remainder of the application. Hirahara specifically discusses woven fabrics in paragraph [0065] cited by the Examiner, as well as in Example 4 found at paragraph [0076].

Therefore, Applicants again submit that it is clearly non-obvious to use the method of claim 1 for creating a diffusion media in view of the comments present in Hirahara. Specifically, according to Hirahara, non-woven fabrics have poor electrical conductivity. As such, one skilled in the art could not conclude from Hirahara that an acceptable diffusion media may be formed from a non-woven material without a graphitization step (which increases electrical conductivity).

Finally, while the Examiner states that Example 4 of Hirahara does not include a graphitization step, Applicants respectfully submit that it clearly includes a graphitization step. In Example 4, Hirahara states "[t]he conductive carbonaceous-fiber woven fabric obtained in Example 3 was heated to 900 °C in a nitrogen stream to carbonize the phenolic resin adherent thereto." (paragraph [0076]). Looking next to Example 3, cited in Example 4, Hirahara states "[a] conductive carbonaceous-fiber woven fabric was obtained in the same manner as in Example 1, except that a phenolic resin (resol type) solution having a concentration of 6% by weight was used." (paragraph [0075]). Finally, looking to Example 1, cited in Example 3, Hirahara states "[t]his woven fabric

was heated to 900 °C in a nitrogen stream to carbonize it and then heated to 2,000 °C in an argon atmosphere to conduct graphitization.” (paragraph 0072)).

Thus, as clearly stated in Example 1, the fabric included in Example 3 undergoes the step of graphitization. As Example 4 includes the fabric of Example 3, the fabric of Example 4 includes the step of graphitization as well. While Example 4 includes a carbonization process requiring the fabric to be heated to 900 °C, this is merely required as an additional step for the carbonization of the phenolic resin applied after the graphitization step. This is clearly evidenced by the statement “[t]he carbonaceous-fiber woven fabric was immersed in an ethanol solution of a phenolic resin having a concentration of 3% by weight.” (paragraph [0073]). Example 3 merely modifies this portion by including a phenolic resin having a 6% by weight concentration. Example 4 merely uses the fabric of Example 3 and includes a further carbonization step. As such, Applicants respectfully submit that Example 4 does include a graphitization step and, therefore, does not teach the limitations of claim 1.

Applicants therefore respectfully submit that claim 1 is in condition for allowance. Claims 2-6 depend from claim 1 and should be in condition for allowance for the reasons set forth above. Therefore, reconsideration and withdrawal of the rejection of claims 1-6 are respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is

believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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